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CENTRAL INTELLIGENCE AGENCY

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50X1-HUM

S-E-C-R-E-T
NO FOREIGN DISSEM

50X1

COUNTRY USSR (Kuybyshev Oblast)

REPORT

SUBJECT Characteristics of Soviet Crude Oil from Mukhanovo

DATE DISTR. 31 July 1963

NO. PAGES 1

REFERENCES

DATE OF INFO.

PLACE & DATE ACQ.

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THIS IS UNEVALUATED INFORMATION. SOURCE GRADINGS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

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A report on the characteristics of Soviet crude oil from Mukhanovo (N 53-21, E 51-21) This information was made available to the engineering firm of F. Schroeder of Recklinghausen which needed this data to design the machinery and equipment for a fully automated dehydrating, desalting, and stabilizing plant to be purchased by the Soviet Union.[1]

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1. Comment: Soviet negotiations with representatives of the Rheinische Stahlwerke and with representatives of the Lurgi firm for the delivery of two such plants. Each plant was to be capable of processing annually three million metric tons of crude oil.

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GROUP 1
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STATE	DIA	ARMY	NAVY	AIR	NSA	XMOX	NIC	OCR	

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SUBJECT: Characteristics of Crude Oil at Mukhanovo

1. The composition of the crude oil at 20 degrees Centigrade is as follows:

	Molecular weight/percent
CO_2 (carbon dioxide)	0.02
CH_4 (methane)	0.20
C_2H_6 (ethane)	2.06
C_3H_8 (propane)	5.37
$i\text{-}C_4H_{10}$ (iso-butane)	1.48
$n\text{-}C_4H_{10}$ (normal butane)	6.37
$i\text{-}C_5H_{12}$ (iso-pentane)	2.16
$n\text{-}C_5H_{12}$ (normal pentane)	4.99
C_6H_{14} (hexane and higher hydrocarbons	77.45
Residuals	205.00

2. The specific weight of the crude oil at 15 degrees Centigrade is 0.84.

3. The viscosity of the dehydrated oil is as follows:

	Centi-Stoke
At 5 degrees Centigrade	12
At 20 degrees Centigrade	6
At 55 degrees Centigrade	4

4. The crude oil temperature is as follows:

During the winter	plus ten degrees Centigrade
During the summer	plus twenty degrees Centigrade

5. The salt content of the crude oil increases with the water content, ranging from 15,000 to 30,000 milligrams per liter.

6. Ground water has the specific weight of 1.19. Its mineralization amounts to about 820 milligrams/equivalent at 100 grams water.

7. The analysis of the fresh water for technical purposes and public use (Verbrauchswirtschaftliche Zwecke) is as follows:

See following page.

8. The water temperature is 5 - 15 degrees Centigrade.

9. The water pressure: 6 - 7 atmospheres absolute pressure.

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		Milligram/liter	Milligram/equivalent	Weight/percent
A.	Alkalinity (KOH) 5.15 ml/liter		1	
B.	Suspended matters	33.00		
C.	Dry residuals at 110 degrees C.	791.2		
D.	Silicon acid	18.4		
E.	Metallic oxides	0.4		
F.	Calcium	141.20	7.05	28.61
G.	Magnesium	36.30	2.98	12.09
H.	Alkali	52.66	2.29	9.30
I.	Chlorine	49.62	1.40	5.68
J.	Sulphuric acid	277.35	5.77	23.42
K.	Hydrocarbons	314.15	5.15	20.90
L.	Combined carbon dioxide	113.30		
M.	Total hardness		10.03	
N.	Carbonat hardness		5.15	
O.	Permanent hardness		4.88	
P.	Mineral contents		24.64	

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